

AMENDMENT

In The Claims:

Please amend the claims as follows:

1. (Currently amended) An encoding method used by a digital television, a mobile communication apparatus, a broadband communications network apparatus or a family consumer electronics apparatus for skipped macroblocks in a video image ~~[[of a video processing system]]~~, characterized in that it comprises the steps of:

step 1, adding one indication bit into a picture header for indicating a coding mode for skipped macroblocks in a current image;

step 2, selecting a run length coding mode or a joint coding mode of the number of skipped macroblocks and the macroblock types ~~[[the coding mode]]~~ for a macroblock type in the current image according to the number of skipped macroblocks, wherein the run length coding mode is employed for the current image with a plurality of skipped macroblock, and the joint coding mode is employed for the current image with few skipped macroblocks, wherein the run length coding mode is to employ a variable length coding to encode the number of skipped macroblocks for continuous skipped macroblocks; and add one indication bit between continuous non-skipped macroblocks to indicate that the number of skipped macroblocks is 0,

if it is ~~[[a]]~~ the run_length coding mode, then proceeding to step 3; if it is ~~[[a]]~~ the joint coding mode of the number of skipped macroblocks and the macroblock type, then proceeding to step 4;

step 3, setting the indication bit of the picture header as a status indicating a run_length coding, and encoding the macroblock type in the image by the run_length coding mode; then proceeding to step 5;

step 4, setting the indication bit of the picture header as status indicating a joint coding and encoding the macroblock type in the image by the joint coding mode of the number of skipped macroblocks and the macroblock type; then proceeding to step 5;

step 5, encoding the current image and writing data into a code stream.

2. (Currently amended) The encoding method used by a digital television, a mobile communication apparatus, a broadband communications network apparatus or a family consumer electronics apparatus for skipped macroblocks in a video image ~~[[of a video processing system]]~~ of claim 1, wherein the indication bit added in step 1 is for all the picture headers of the pictures to be coded.

3. (Currently amended) The encoding method used by a digital television, a mobile communication apparatus, a broadband communications network apparatus or a family consumer electronics apparatus for skipped macroblocks in a video image ~~[[of a video processing system]]~~ of claim 1, wherein selecting the run_length coding mode or the joint coding mode of the number of skipped macroblocks and the macroblock types ~~[[the coding mode]]~~ for a macroblock type in the current image in the step 2 is through a twice encoding procedure comprising the particular steps of:

step 200, employing the run_length coding mode for all the macroblocks in the current image to be coded, and obtaining corresponding coding performance parameters after above processing;

step 201, secondly encoding the current image to be coded, employing the joint coding mode of the number of skipped macroblocks and the macroblock type for all the macroblocks, and obtaining corresponding coding performance parameters after above processing;

step 202, comparing the performance parameters obtained from the twice encoding, and selecting an optimal coding mode for the skipped macroblocks in the current image.

4. (Currently amended) The encoding method used by a digital television, a mobile communication apparatus, a broadband communications network apparatus or a family consumer electronics apparatus for skipped macroblocks in a video image ~~[[of a video processing system]]~~ of claim 3, wherein the performance parameters to be compared comprise: a signal-to-noise ratio and a coding rate.

5. (Withdrawn) The encoding method for skipped macroblocks in a video image of claim 1, wherein selecting the coding mode for a macroblock type in the current image in the step 2 is to use an adaptive mode based on statistic to realize fast coding, which comprises the particular steps of:

step 210, counting the number and ratio of the skipped macroblocks in the current image in each encoding;

step 211, judging whether the ratio of the skipped macroblocks in a previous frame is larger than a threshold before encoding a next frame;

step 212, if it is larger than the threshold , then proceeding to step 3 by using the run_length coding mode;

step 213, if it is less than the threshold , then proceeding to step 4 by using the joint coding mode of the number of skipped macroblocks and the macroblock type.

6. (Withdrawn) The encoding method for skipped macroblocks in a video image of claim 5, wherein the threshold is obtained by a statistical method.

Claim 7. (Cancelled)

8. (Currently amended) The encoding method used by a digital television, a mobile communication apparatus, a broadband communications network apparatus or a family consumer electronics apparatus for skipped macroblocks in a video image ~~[[of a video processing system]]~~ of claim 1, wherein the joint coding mode of the number of skipped macroblocks and the macroblock type in step 4 is to process P frame image and B frame image together, add one skip type in macroblock types, determine skip macroblock type position in a macroblock type table by skip macroblock type average appearance probability, and correspondingly adjust the whole macroblock type table;

for the skipped macroblocks, to encode them one by one by using the skip type according to their skipped counters and indicating them one by one; for the non-skipped macroblocks, to encode them by using corresponding macroblock types.

9. (Currently amended) The encoding method used by a digital television, a mobile communication apparatus, a broadband communications network apparatus or a family consumer electronics apparatus for skipped macroblocks in a video image ~~[[of a video processing system]]~~

of claim 1, wherein the joint coding mode of the number of skipped macroblocks and the macroblock type in step 4 is to process P frame image and B frame image respectively: if it is a P frame image, adding a skip type in a former macroblock type table to encode; if it is a B frame image, modifying its former Direct mode coding, the coding mode for each skipped macroblock is to use a Direct mode coding value closely followed by a CBP (Coded Block Pattern) zero coding value, and the coding mode for the non-skipped macroblock is to use a Direct mode coding value closely followed by a CBP non zero coding value.

10. (Currently amended) The encoding method used by a digital television, a mobile communication apparatus, a broadband communications network apparatus or a family consumer electronics apparatus for skipped macroblocks in a video image ~~[[of a video processing system]]~~ of claim 1, wherein said run length coding mode or said joint coding mode of the number of skipped macroblocks and the macroblock types ~~[[coding mode]]~~ for skipped macroblocks is adaptive to be performed not only for frame coding but also for field coding.